

1 the second opposing surface of the layer of adhesive in substantially  
2 vertical orientation, the fiber first portions terminating in tips above the  
3 second opposing surface of the layer of adhesive; and

4 an encapsulant comprising a gel between the first portions of the  
5 fibers and over the adhesive.  
6

7 5. The thermally conductive structure of claim 4 wherein the  
8 tips of the fibers extend to above the encapsulant.  
9

10 6. The thermally conductive structure of claim 4 wherein the gel  
11 comprises a polymer.  
12

13 7. The thermally conductive structure of claim 4 wherein the  
14 thermally conductive fibers are selected from the group consisting of  
15 carbon fibers, metal fibers, and ceramic fibers.  
16

17 8. The thermally conductive structure of claim 4 wherein the  
18 thermally conductive fibers are selected from the group consisting of  
19 graphite fibers and diamond fibers.  
20

21 9. The thermally conductive structure of claim 4 wherein the  
22 thermally conductive fibers are carbon fibers.  
23

1           10. The thermally conductive structure of claim 4 wherein the  
2 encapsulant is on the second opposing surface of the layer of adhesive.

3  
4           11. The thermally conductive structure of claim 4 wherein the  
5 fibers have second portions which extend downwardly to at or below the  
6 first opposing surface of the layer of adhesive.

7  
8           12. A thermally conductive structure, comprising:  
9           a layer of adhesive having a pair of opposing surfaces, the  
10 opposing surfaces being a first opposing surface and a second opposing  
11 surface;

12           a plurality of thermally conductive fibers embedded in the adhesive,  
13 the fibers having first portions which extend out of the second opposing  
14 surface of the layer of adhesive and upwardly from the second opposing  
15 surface, the first portions terminating in tips above the second opposing  
16 surface of the layer of adhesive, the tips being at a same height above  
17 the second opposing surface as one another; the thermally conductive  
18 fibers being selected from the group consisting of carbon fibers, metal  
19 fibers, and ceramic fibers; and

20           an encapsulant comprising a gel between the first portions of the  
21 fibers and over the adhesive.

1           13. The thermally conductive structure of claim 12 wherein the  
2 upwardly extending first portions are parallel to one another and  
3 perpendicular to the second opposing surface.

4  
5           14. The thermally conductive structure of claim 12 wherein the  
6 thermally conductive fibers are carbon fibers.

7  
8           15. The thermally conductive structure of claim 12 wherein the  
9 tips of the fibers extend to above the encapsulant.

10  
11           16. The thermally conductive structure of claim 12 wherein the  
12 encapsulant is on the second opposing surface of the layer of adhesive.

13  
14           17. The thermally conductive structure of claim 12 wherein the  
15 fibers have second portions which extend downwardly to at or below the  
16 first opposing surface of the layer of adhesive.

1           18. A thermally conductive structure, comprising:  
2           a layer of adhesive having a pair of opposing surfaces, the  
3           opposing surfaces being a first opposing surface and a second opposing  
4           surface;

5           a plurality of thermally conductive fibers extending through the  
6           adhesive, the fibers having first portions which extend out of the second  
7           opposing surface of the layer of adhesive, the first portions extending  
8           upwardly from the second surface, the upwardly extending first portions  
9           being parallel to one another, the first portions terminating in tips above  
10          the second opposing surface of the layer of adhesive, the fibers having  
11          second portions which extend downwardly to at or below the first  
12          opposing surface of the layer of adhesive; the thermally conductive fibers  
13          being selected from the group consisting of carbon fibers, metal fibers,  
14          and ceramic fibers; and

15          a gel encapsulant between the first portions of the fibers and on  
16          the adhesive.

17  
18          19. The thermally conductive structure of claim 18 wherein the  
19          tips are at a same height above the second opposing surface as one  
20          another.

21  
22          20. The thermally conductive structure of claim 18 wherein the  
23          thermally conductive fibers are carbon fibers.

1           21. A thermally conductive structure, comprising:

2           a substrate layer having a pair of opposing surfaces, the opposing  
3 surfaces being a first opposing surface and a second opposing surface,  
4 the first and second surfaces being spaced from one another along a  
5 direction defined as a vertical direction;

6           a plurality of thermally conductive fibers embedded in the substrate  
7 layer, the fibers having first portions which extend upwardly out of the  
8 second opposing surface of the substrate layer in substantially vertical  
9 orientation, the fiber first portions terminating in tips above the second  
10 opposing surface of the substrate layer; and

11           an encapsulant between the first portions of the fibers and over  
12 the substrate layer, the encapsulant at least temporarily adhering to the  
13 first portions of the fibers.

14  
15           22. The thermally conductive structure of claim 21 wherein the  
16 tips of the fibers extend to above the encapsulant.

17  
18           23. The thermally conductive structure of claim 21 wherein the  
19 substrate layer is an adhesive.

20  
21           24. The thermally conductive structure of claim 21 wherein the  
22 thermally conductive fibers are carbon fibers.

1           25. The thermally conductive structure of claim 21 wherein the  
2 encapsulant is a polymeric gel.

3  
4           26. A thermally conductive structure, comprising:  
5 a layer of adhesive having a pair of opposing surfaces, the  
6 opposing surfaces being a first opposing surface and a second opposing  
7 surface;

8 a plurality of flocked, thermally conductive fibers embedded in the  
9 adhesive, the fibers having first portions which extend upwardly out of  
10 the second opposing surface of the layer of adhesive in substantially  
11 vertical orientation;

12 an encapsulant between the first portions of the fibers and over  
13 the adhesive; and

14 a third surface defining an outermost surface of the thermally  
15 conductive structure except for the fiber first portions terminating in tips  
16 above the third surface and the encapsulant.

17  
18           27. The thermally conductive structure of claim 26 wherein the  
19 encapsulant comprises a polymeric gel.

20  
21           28. The thermally conductive structure of claim 26 wherein the  
22 third surface comprises a surface of the encapsulant.  
23

1           29. The thermally conductive structure of claim 26 wherein the  
2 thermally conductive fibers are carbon fibers.

3  
4           30. The thermally conductive structure of claim 26 wherein the  
5 fibers have second portions which extend downwardly to at or below the  
6 first opposing surface of the layer of adhesive.

7  
8           31. A thermally conductive structure, comprising:

9           a layer of adhesive having a pair of opposing surfaces, the  
10 opposing surfaces being a first opposing surface and a second opposing  
11 surface, the first and second surfaces being spaced from one another  
12 along a direction defined as a vertical direction;

13           a plurality of flocked, thermally conductive fibers embedded in the  
14 adhesive, the fibers having first portions which extend upwardly out of  
15 the second opposing surface of the layer of adhesive in substantially  
16 vertical orientation, the fiber first portions terminating in tips above the  
17 second opposing surface of the layer of adhesive; and

18           an encapsulant comprising a gel over the adhesive, between the  
19 first portions of the fibers, and beneath free tips of the fibers.